

## REMARKS

### **Claim Rejections**

Applicant has cancelled claims 6 and 8, such that independent claim 7 is the only pending claim. Accordingly, the § 112 and § 103 rejections of claims 6 and 8 are moot.

Claim 7 has been rejected as being obvious over the combination of Giersek, Rallis, and Japan '213. Applicant respectfully traverses this rejection, and requests reconsideration of claim 7.

It is noted that Applicants do not have an English translation of the Japanese patent, except for the Derwent Abstract translation.

As the Examiner acknowledges on pages 8-9 of the Office Action, Giersek fails to teach 1) jet-abrasion pretreatment of the metal prior to plunging; 2) the melt temperature range; and 3) the precise alloy composition for the aluminum melt. The Examiner relies upon Rallis and Japan '213 to overcome these deficiencies. As discussed in detail below, it would not be obvious to a person having skill in the art to modify Giersek as suggested by the Examiner to achieve Applicants' invention.

More particularly, Applicants' invention, as set forth in claim 7, coats a cast iron or steel product with a very specific aluminum alloy composition at a narrow temperature range (660-680° C) for a small period of time (70-80 seconds) without the use of flux. This process produces a coated product with a plastic coating of high corrosion resistance. See the Specification, paragraphs [0012] and [0013] of the published application. It is not obvious to combine the cited references, as asserted by the Examiner, to achieve this goal of plasticity of the coating on the product.

As discussed in the Rule 132 Declaration of Dr. Frankel submitted in Applicants' Amendment dated August 18, 2010, the Rallis process produces a high strength coated product which is the opposite of Applicants' ductile coated product. Since the goals of Applicants' process and Rallis' process are contrary to one another, there is no reason that a person skilled in the art would look to Rallis for any purpose or useful information. Furthermore, the Examiner acknowledges on page 11 of the Office Action that the temperature of the melt bath should be optimized for the specific aluminum alloy used in the bath. However, neither Gierек nor Rallis use the specific aluminum alloy set forth in claim 7, such that the temperature ranges disclosed in Gierек and Rallis are meaningful only for the specific alloys disclosed therein, and are meaningless for Applicants' different alloy composition. The Japan '213 reference does not overcome this deficiency of Gierек and Rallis, since this Japanese reference appears to have no temperature ranges for the alloy bath.

Similarly, the optimum bath time is also related to the specific aluminum alloy. Thus, the times disclosed in Gierек and Rallis are irrelevant since they each use a different alloy than Applicants, and Japan '213 does not appear to provide any disclosure on bath times.

Gierек does not provide any specific alloy for the aluminum bath. Gierек also provides a wide range of temperature, from 550° to 950° C, and a wide bath time of 15 seconds to 30 minutes. None of the Gierек examples use Applicants' temperature range of 660° - 680° C. Examples I-V and VII use temperatures at 700° C and above, while Example VI has a maximum temperature of 650° C. Even if the alloy of the Japan '213 patent is used in the Gierек bath, substantial experimentation would be necessary to find Applicants' preferred narrow temperature range of 660° - 680° C and Applicants' short bath time of 70-80 seconds, as required by claim 7.

Since Gierek does not disclose Applicants' alloy, Rallis teaches away from Applicants' plasticity goal, and Japan '213 has no time or temperature limitations, a person skilled in the art would not combine these references to achieve Applicants' invention, as suggested by the Examiner, absent hindsight from the present application.

Furthermore, Rallis teaches that the tool to be aluminized must be immersed in the molten aluminum bath at a temperature of 1000° - 1341° F for a period of more than 5 minutes. Thus, while the Rallis bath temperature covers Applicants' temperature range, albeit for a different alloy, the time for the Rallis bath is substantially longer than Applicants' bath time. Rallis provides two examples of a coating process using an aluminum bath at 1300° F, which exceeds Applicants' temperature range, and for a period of 40 minutes (Example I) or 2 hours (Example II). There is nothing in Rallis to suggest that the time for the bath can be reduced to 70-80 seconds, as required by claim 7.

The prior art must be analyzed or compared for its complete teaching, and not dissected. Thus it is improper to consider the Rallis bath temperature apart from the bath time. When considered together, Rallis teaches away from the time limitations of claim 7.

The Examiner asserts on page 11 that it would be obvious to modify Gierek in view of Rallis to use the alloy of the Japan '213 patent, since this will provide a desirable corrosion resistant plated article. However, there is no evidence that the Japanese coated article has any more corrosion resistance than the coated article of Gierek or the coated article of Rallis. See Gierek, col. 2, lines 31-36, and col. 3, lines 1-5; Rallis Abstract, col. 1, lines 65-69, col. 2, lines 3-9, and col. 5, lines 32-45. Since both Gierek and Rallis provide corrosion resistance to the aluminum coated article, there is no rational underpinning (as required by the Supreme Court in KSR) for modifying either of these references as taught by the Japan '213. The Examiner has

provided no evidence that the process of Japan '213 produces better corrosion resistance than Gierek or Rallis. Therefore, there is no reason to modify Gierek, as suggested by the Examiner.

Furthermore, as noted in Dr. Frankel's Rule 132 Declaration previously submitted, the Japanese patent is directed towards an automotive radiator with corrosion resistance provided by an aluminum alloy. See Frankel Declaration, paragraph 5. There is no evidence that plasticity of the coating is needed or is even desirable for the automotive radiator of the Japanese patent. Since the radiator generally does not have moving components having a need for plasticity, it is unlikely that the Japanese process will achieve the plasticity which results from Applicants' bath time and temperature, as set forth in claim 7. Thus, there is no reason a person skilled in the art would rely upon the Japanese patent for any relevant or useful bath parameters.

None of the cited references provide an enabling disclosure for the specific alloy composition, temperature and time set forth in claim 7. A proper obviousness rejection must be premised upon references having enabling disclosures. See *Rockwell Int'l Corp. v. U.S.*, 147 F.3d 1358, 1365 (Fed. Cir. 1998); *Reading & Bates Construction Co. v. Baker Energy Resources*, 223 U.S.P.Q. 1168, 1173 (Fed. Cir. 1984); *Application of Payne*, 606 F.2d 303, 314 (CCPA 1979). As the Supreme Court explained in *KSR*, a determination of obviousness must be made with respect to the subject matter as a whole, and not separate pieces or limitations of the claim, as the Examiner has done. *KSR Int'l Co. v. Teleflex*, 127 S.Ct. 1727, 1734 (2007). Citing references which merely indicate that isolated elements recited in the claims are known is not a sufficient basis for concluding that the combination of claimed elements is obvious. *Ex Parte Hiyamizu*, 10 U.S.P.Q. 1393, 1394 (BPAI 1988). It is wrong to use the present application as a guide through the maze of prior art references, combining the right references in the right way so

as to achieve the result of claim 7. *Orthopedic Equipment Co. v. U.S.*, 702 F.2d 1005, 1012 (Fed. Cir. 1983).

In view of the foregoing, Applicants respectfully request that the § 103 obviousness rejection of claim 7 be withdrawn and that a Notice of Allowance be issued.

## Conclusion

This is a request to extend the period for filing a response in the above-identified application for one month from January 13, 2011 to February 13, 2011. Applicants are a small entity; therefore, please charge Deposit Account No. 26-0084 in the amount of \$65.00 to cover the cost of the three-month extension.

No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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